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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,475	03/30/2001	Nischal Abrol	010153	5736
23696	7590	11/15/2004	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			TANG, KAREN C	
			ART UNIT	PAPER NUMBER
			2662	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,475

Applicant(s)

ABROL ET AL.

Examiner

Karen C Tang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-15, 18, 20-22 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 16, 17 and 23 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7.5.01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9.23.02</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

The disclosure is objected to because the provisional application number was not provided, on page 1 Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

- I. Claims 28 and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Spec does not mention the third bytes within the first bytes nor does it mention the third bytes within the second bytes.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- II. Claims 28 and 29 are rejected under 35 U.S.C. 112, second paragraph, because it is confusing to the Examiner that what is the first, second and third

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bytes and how is the third bytes in the first bytes, and how is the third bytes in the second bytes, which are not defined clearly in the Spec.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7-15, 18, 20-22, 24-30
III. Claims 1-4, *7-15, 18, 20-22, 24-30* are rejected under 35 U.S.C. 103(a) as

being unpatentable over Ludwig et al. hereinafter Ludwig (US 6,697,352)

1. Referring to Claim 1:

Ludwig discloses establishing a single Point-to-point Protocol (PPP) layer for communication between a mobile station and a wireless network, refer to Fig 6, Col 3 Lines 15-35, and Col 9 Lines 45-60.

Ludwig discloses a single RLP layer which handles two grades of service, numbered for reliable transport (TCP) and one for time sensitive (UDP), refer to Col 6 Lines 14-26.

Ludwig does not expressly disclose sending from a single PPP layer to two different RLP layers based on grades of service.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to setup a second RLP layer. The suggestion/motivation hereinafter for doing so would have been Ludwig discloses RLP can handle time

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sensitive (UDP) and high reliability data (TCP). The benefit by implementing two RLP layers, one for time sensitive (Unnumbered) and one for reliable transmission (Numbered) is so that the RLP layers do not have to use up extra processing time to determine which grade of service (Numbered or unnumbered) the information transferred from the PPP layer is to be categorized.

2. Referring to Claims 2, 12 and 21,

Ludwig discloses a separate queue (Buffer) for each grade of service, one queue for the numbered, high priority, and one queue for the unnumbered, time sensitive, refer to Col 11, Lines 9-14.

The packets in the numbered queue are window-based flow control and need to be retained in the queue until the receiver acknowledge the correct received of the packet. Whereas the packets in the unnumbered queue are sent in order and no retransmission is required therefore, the size of the queue in the unnumbered grade of service is smaller than the size of queue in the numbered grade of service.

3. Referring to Claims 3 and 13,

Ludwig discloses numbered packets which is mapped to the first buffer that includes retransmission and sequencing, refer to Col 9 Lines 9-20.

Ludwig discloses a second buffer for unnumbered time-sensitive packets, refer to Col 9, Lines 9-20.

4. Referring to Claims 4, and 14,

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A single High-level Data Link Control (HDLC) layer, disposed between said PPP layer and said first and second RLP layers (A second RLP, please refer to Claim 1.).

Ludwig discloses a L2R layer between a PPP layer and an RLP layers, refer to Fig 6.

Ludwig does not expressly discloses an HDLC layer despond between the PPP layer and the RLP layer.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to contain an HDLC layer, the suggestion/motivation for doing so would have been that Ludwig discloses there is a layer (L2R) between the PPP and RLP layers, refer to Fig 6, which could be a HDLC layer. The benefit is an HDLC layer, it can handle mobile signaling between the PPP and RLP layer, refer to Col 15, Lines 25-44.

5. Referring to Claim 7,

Ludwig discloses wherein the memory embodies a method for providing packet data services, the method comprising:

Ludwig discloses establishing a single Point-to-point Protocol (PPP) layer for the mobile station , refer to Col 3 Lines 25-68, sending and receiving data through said single PPP layer using at least two Radio Link Protocol (RLP) layers (A second RLP layer, please refer to Claim 1.) characterized by at least two different grades of service refer to Col 6, Lines 27-45, Col 12, Lines 35-51, and Col 15, Lines 13-45.

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6. Referring to Claim 8, Ludwig discloses a wireless modem for modulating RLP frames generated by the first and second RLP layers (A second RLP layer, please refer to Claim 1.), refer to Col 3 Lines 25-35.

Ludwig discloses a mobile station and a base station, refer to Fig 6. The mobile and the base station have modem to communication over the air, refer to Col 3, Lines 25-35.

7. Referring to Claim 9, Ludwig discloses a CDMA wireless modem for modulating RLP frames generated by the first and second RLP layers (A second RLP layer, please refer to Claim 1.) refer to Col 8, Lines 1-27.

Ludwig discloses a mobile station and a base station, refer to Fig 6. The mobile utilize its modem to communicate with base station over the air with CDMA wireless technology, refer to Col 8, Lines 1-27.

8. Referring to Claim 10, Ludwig discloses mobile station refer to Fig 6, and Ludwig disclose the use of Hardware and Software to exchange – packets, refer to Col 1, Lines 34-45. It is known that Hardware and Software requires processor to processing information.

9. Referring to Claim 11, Ludwig discloses wherein the different grades of service include a reliable grade of service (Numbered) and a low latency grade of service (Unnumbered modes), refer to Col 4, Lines 8-51.

10. Referring to Claim 15,

Ludwig discloses packets which consists controlling information for particular protocols (Packet control function, refer to Col 2, Lines 10-25) which consist a memory (Buffers/queues, refer to Col 11, Lines 10-20.) that stores the

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grade of service information characterized by RLP, refer to Fig 6, and Col 3 Lines 25-67.

Ludwig does not expressly disclose a second RLP layer (A second RLP layer, please refer to Claim 1.) characterized by a second grade of service (Unnumbered) different from the first grade of service (Numbered) refer to, Col 4, Lines 8-51.

Ludwig discloses receiving data from a mobile station through the first RLP layer refer to Fig 6, and 10, and Col 3, Lines 25-60, Col 17, Lines 35-45.

Ludwig does not expressly disclose and receiving data from the mobile station through the second RLP layer (A second RLP layer, please refer to Claim 1.) refer to Fig 6, and 10, and Col 3, Lines 25- 60, Col 17, Lines 35-45.

11. Referring to Claim 18, Ludwig discloses a Packet Control Function (PCF) for establishing a first Radio Link Protocol (RLP) layer characterized by a first grade of service, establishing a second RLP layer (A second RLP layer, please refer to Claim 1.) characterized by a second grade of service (Unnumbered) different from the first grade of service (Numbered) refer to Col 4, Lines 8-51.

Ludwig discloses receiving data from a mobile station through the first RLP layer, and receiving data from the mobile station through the second RLP layer (A second RLP layer, please see to Claim 1.) refer to Col 3, Lines 25-45.

Ludwig discloses a Packet Data Serving Node (PDSN, where IWF in the art is the same as PDSN as stated in the application, refer to Col 2, Lines 60-67 and Col 3, Lines 1-10.) for extracting IP packets from data received through the

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first and second RLP layers (A second RLP layer, please see Claim 1.) and providing the IP packets to an internet refer to Col 2, Lines 10-40 and Col 3, Lines 35-60.

12. Referring to Claim 20,

Ludwig discloses a single Point-to-point Protocol (PPP) layer for communication between a mobile station and a wireless network refer to Col 3, Lines 15-60.

Ludwig discloses sending and receiving data through said single PPP layer using at least two Radio Link Protocol (RLP) layers (A second RLP layer, please see Claim 1.) characterized by at least two different grades of service (Numbered and unnumbered) refer to Col 4 Lines 8-51.

13. Referring to Claim 22, Ludwig discloses a single High- level Data Link Control (HDLC) layer, disposed between said PPP layer and said at least two RLP layers (A second RLP layer, please refer to Claim 1.) refer to Col 3, Lines 25-60.

14. Referring to Claim 24,

Ludwig discloses establishing at least two High-Level Data Link Control (HDLC) layers (A second HDLC, please see Claim 6.), wherein one HDLC layer is disposed between said PPP layer (refer to Col 3, Lines 35-60) and each of said at least two RLP layers (A second RLP layer, please see Claim1.).

15. Referring to Claim 25,

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Ludwig discloses a mobile station, establishing a single Point-to-point Protocol (PPP) layer for communication between a mobile station and a wireless network refer to Col 3, Lines 35-67.

Ludwig discloses at the mobile station, using the single PPP layer to encapsulate an IP packet associated with a delay-sensitive application to generate a first PPP packet', at the mobile station, using the single PPP layer to encapsulate an IP packet associated with a non-delay-sensitive application to generate a second PPP packet refer to Fig 6, Col 2, Lines 10-40, Lines 61-67, and Col 3, Lines 10-60;

Ludwig discloses at the mobile station, sending the first PPP packet through a low latency Radio Link Protocol (RLP) layer (Unnumber mode) to the wireless network, refer to Col 4, Lines 8-51.

Ludwig discloses at the mobile station, sending the second PPP packet (Second PPP packet, refer as unnumbered packets transmitted first then followed by the transmission of the numbered packets), refer to Col 15, Lines 1-15) through a reliable RLP layer (Numbered mode) to the wireless network, refer to Col 4, Lines 8-51.

16. Referring to Claim 26, Ludwig discloses converting the first PPP packet into a first High- level Data Link Control (HDLC) frame using an HDLC layer in the mobile station prior to sending the first PPP packet', and at the mobile station, converting the second PPP packet (A second PPP packet, please see Claim 25.) into a second HDLC frame (A second HDLC frame, please see

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Claim 6.) using the HDLC layer in the mobile station prior to sending the second PPP packet, refer to Col 3, Lines 10-60.

17. Referring to Claim 27,

Ludwig discloses receiving address information (A first set of data bytes) from a mobile station through a low latency Radio Link Protocol (RLP) (Unnumber mode) layer refer to Col 3, Lines 25-67 and Col 4, Lines 8-51.

Ludwig discloses receiving (Control filed) a second set of data bytes from the mobile station through a reliable RLP layer, refer to Col 3, Lines 25-47 and Col 4, Lines 8-51;

Ludwig discloses providing the address field information (A first set of data bytes) to a Packet Data Serving Node (PDSN, same as IWF in the prior art, refer to Col 2, Lines 60-67 and Col 3, Lines 1-10.) through a Point-to-point Protocol (PPP) connection with the PDSN.

Ludwig discloses providing the control filed (A second set of data bytes) to the PDSN through the PPP connection refer to Col 2, Lines 10-67 and Col 3, Lines 1-60.

18. Referring to Claim 28,

Ludwig discloses the address field information (First set of data bytes to the PPP layer, using one or more High-level Data Link Control (HDLC) flag characters, refer to Fig 7, Col 2, Lines 20-35, (which is an HDLC frame.) within the first set of data bytes to identify a check field (A third set of data bytes) within the address field information (A first set of data bytes) corresponding to at least one complete HDLC frame, refer to Col 3, Lines 47-67.

Ludwig discloses providing the check field (Third set of data bytes) consecutively to the PDSN through the PPP connection refer to Col 3, Lines 60-67.

19. Referring to Claim 29, Ludwig discloses prior to providing the address field (First set of data bytes) to the PPP layer, refer to Col 3, Lines 60-67 using one or more High-level Data Link Control (HDLC) flag characters within the control field (A second set of data bytes) to identify a check field (A third set of data bytes) within the second set of data bytes corresponding to at least one complete HDLC frame, refer to Col 3, Lines 45-67.

Ludwig discloses providing the third set of data bytes consecutively to the PDSN (PDSN is the same as IWF refer to Col 2, Lines 60-67 and Col 3, Lines 1-10) through the PPP connection, refer to Col 3, Lines 35-67.

20. Referring to Claim 30, Ludwig discloses the an address field, (The first set of data bytes) to the PPP layer through a first High- level Data Link Control (HDLC) connection with the PDSN (PDSN is the same as IWF in the art.), refer to Col 2, Lines 60-67 and Col 3, Lines 35-67.

Ludwig discloses providing the control field (Second data bytes) to the PPP layer through a second HDLC (A second HDLC, please see Claim 6.) connection with the PDSN (PDSN is the same as IWF in the art), refer to Col 2, Lines 60-67 and Col 3, Lines 1-10.

Allowable Subject Matter

Claims 5, 6, 16, 17 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

- Regarding to Claims 5 and 23: the prior art does not teach a deframer layer
which disposed between a HDLC layer and a RLP layer.
- Regarding to Claims 6, 16, and 17: the prior art does not teach a second HDLC layer disposed between said PPP layer and said second RLP layer.

Claim 19 is allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US 6,795,705 (Warrier et al discloses a hot standby protocol for wireless device)
- US 6,542,490 (Ahmadvand et al. discloses a data link control protocol for 3G wireless system).

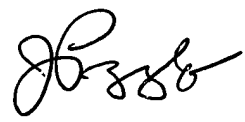
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Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen C Tang whose telephone number is (571)272-3116. The examiner can normally be reached on M-F 7 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571)272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KT


JOHN PEZZLO
PRIMARY EXAMINER